effort remained in the territory well into the nestling period of the second brood and continued to be fed by the parents. Despite apparent high nest success, continued observation of marked birds suggests much lower recruitment. After the fledgling dependency period, juvenile mortality greatly increases, primarily due to collisions with vehicles.

METABOLIC BASIS FOR GLUCOSE INTOLERANCE IN RAPTORS

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Anecdotal reports have suggested that raptors are relatively intolerant to glucose and in some cases have died after receiving glucose i.v. or subcutaneously. It was of interest to find the mechanisms responsible for their intolerance and to access their adaptability to a diet containing glucose. Nonreleasable barn owls (*Tyto alba*) and white leghorn chicks (*Gallus domesticus*) (6 wk) were fed a LPHG (33.44 Protein: 23.67 CHO: 29.96 Fat: 12.93 Ash) diet and HPLG (55.35 Protein: 1.5 CHO: 29.98 Fat: 13.17 Ash) diet for 8 d. Birds were subjected to a glucose tolerance test (1 g glucose/kg of body weight, i.v.) and hepatic glucose metabolism was examined. LPHG diet significantly ($P = 0.005$) decreased baseline glucose levels in both species yet did not alter the shape of the glucose tolerance curve. Chickens, regardless of diet, reached a peak of 400 mg glucose/dL and took 1 hr to return to baseline while owls peaked at 700 mg glucose/dL and took 3.5 hr to return to baseline. These species differences were significant at $P = 0.0001$. Malic enzyme (ME) increased and alanine aminotransferase (ALT) decreased significantly with LPHG feeding in the chicken but only ALT significantly decreased in the owl. All enzymes measured significantly differed across species with large differences ($P = 0.0001$) in glucokinase (GK), ME (five and three times higher, respectively, in chickens), and phosphoenolpyruvate carboxykinase (PEPCK; three times higher in owls). In vitro experiments revealed that chicken hepatocytes partitioned five times more lactate to glucose as compared to owl hepatocytes, yet owls partitioned three times more threonine to glucose than chickens. It appears from these studies that the owl may be intolerant to glucose because of low enzyme adaptability, low GK activity, and a failure to suppress gluconeogenesis in presence of exogenous glucose. Due to these results it is recommended that injured raptors in need of glucose be given small doses of glucose over time.

SEX ALLOCATION IN THE AMERICAN KESTREL: IS IT RELATED TO THE PHENOTYPE OF THE PARENTS?

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In the case of the American kestrel (*Falco sparverius*), Wiebe and Bortolotti (1992, *Behav. Ecol. Sociobiol.* 30:379–386) reported that small females produced more sons. This could be an adaptive mechanism given than males are smaller and possibly less costly to rear. To determine whether kestrel sex-ratios can be manipulated we conducted an experiment on captive American kestrels maintained at McGill University in 1994. All 300 birds in the colony were weighed and measured (wing chord). The smallest 20 males were paired to the smallest 20 females Conversely, the largest 20 males were paired to the largest 20 females. Small parents reared 16 broods, 10 (63%) of which were male-biased. Sex ratio was 55% males ($N = 56$). Large parents reared 14 broods, eight (57%) of them male-biased. Sex ratio was 52% males ($N = 44$). Differences between the two groups were not statistically significant.

ECOLOGY OF BALD EAGLES WINTERING AND BREEDING NEAR CABALLO RESERVOIR, NEW MEXICO

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The bald eagle (*Haliaeetus leucocephalus*) was listed as an endangered species in the United States in 1978. Intensive state and federal efforts to protect habitat and nest sites have contributed to downlisting in 1994 from endangered to threatened for all but the southwestern population. The number of bald eagles wintering in New Mexico has increased from 175 recorded in 1984 to 478 in 1994; however, there are only two known active nests in New Mexico. This project was initiated to determine if reservoir pool size affects bald eagles wintering and breeding near Caballo Reservoir, New Mexico. Bald eagles wintering on the reservoir were censused by boat or truck from December 1992 through March 1993, and December 1993 through March 1994. Concomitantly, aerial census surveys were performed throughout the middle Rio Grande valley. Behavioral observations were recorded during both winter periods; foraging behavior, perch use, and food habits documentation were the major areas of emphasis. Caballo Reservoir was sampled every three weeks during winter months to determine fish (prey) availability. Optimal foraging experiments were conducted on wintering eagles during 1993 and 1994. The pair of breeding bald eagles that nest near Caballo Reservoir were observed in 1993 and 1994. Two eaglets successfully fledged during the 1993 breeding season, while one eaglet fledged in 1994 (the other egg failed to hatch). Nest observations indicated fish, predominantly gizzard shad (*Dorosoma cepedianum*), were the most common prey item delivered to the nest